Claims

1. Method for the detection of an analyte in a sample comprising the steps:
   (a) preparing a solid phase comprising, in an immobilized form, an analyte-specific solid phase reactant and an analyte-unspecific biomolecule which is coupled to a poly(C_2-C_3)-alkylene oxide,
   (b) incubating the sample with the solid phase and a test reagent and
   (c) detecting the presence or/and the amount of the analyte in the sample.

2. Method as claimed in claim 1,
   wherein
   a solid phase is used which has at least one defined test zone.

3. Method as claimed in ~~one of the~~ claims 1 ~~or 2~~,
   wherein
   a solid phase is used which is coated with a first partner of a high affinity binding pair and on this a conjugate of the analyte-specific solid phase reactant with the second partner of the binding pair is immobilized.

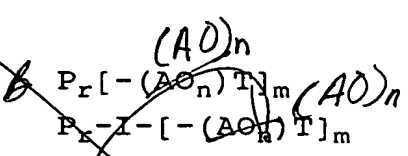
4. Method as claimed in claim 3,
   wherein
   the high affinity binding pair is selected from streptavidin or avidin/biotin or a biotin derivative, antibody/hapten, antibody/antigen, lectin/sugar and receptor/ligand.

5. Method as claimed in claim 4,
wherein
streptavidin or avidin/biotin is used as the high affinity binding pair.

6. Method as claimed in ~~one of the~~ claims 3 ~~to 5~~,
wherein
a blocking substance is used which contains the second partner of the binding pair.

7. Method as claimed in ~~one of the~~ claims 3 ~~to 5~~,
wherein
a blocking substance is used in which one or several polyalkylene oxide residues are directly coupled to the second partner of the binding pair.

8. Conjugates of the general structural formula (Ia) or (Ib):



(Ia)

(Ib)

in which
P is a partner of a high affinity binding pair,
I is an inert carrier,
r is a number from 1 to 10,
AO is a (C_2-C_3)alkylene oxide group,
n is a number from 5 to 500
T is an end group preferably selected from OH, C_1-C_4 alkoxy and C_1-C_4 acyl and
m is a number from 1 to 10.

9. Conjugates as claimed in claim 8, wherein P is biotin or a biotin derivative.

10. Solid phase with a coating which contains a conjugate as claimed in claim 8 ~~or 9~~.

~~11.~~ Use of a conjugate as claimed in claim 8 ~~or 9~~ for reducing the unspecific ~~binding~~ to a solid phase in a method for the detection of an analyte.

~~12.~~ Use as claimed in claim 11 in a method selected from immunological methods of determination and nucleic acid hybridization methods.

13. Reagent kit for the detection of an analyte which contains a conjugate as claimed in claim 8 or 9 or a solid phase as claimed in claim 10 in addition to other test components.

14. Method for the detection of an analyte in a sample comprising the steps:

(a) preparing a solid phase on which a solid phase reactant is immobilized using a modified solid phase reactant which is coupled to a poly(C_2-C_3)-alkylene oxide,

(b) incubating the sample with the solid phase and a test reagent and

(c) detecting the presence or/and the amount of the analyte in the sample.

15. Method as claimed in claim 14, **wherein** a modified universal solid phase reactant is

immobilized on the modified solid phase.

16. Method as claimed in ~~one of the~~ claims 14 ~~or 15~~, **wherein** a modified analyte-specific solid phase reactant is immobilized on the solid phase.

17. Method as claimed in claim 15, **wherein** a universal modified solid phase reactant is used which is a partner of a high affinity binding pair or a conjugate of an analyte-unspecific biomolecule with a partner of a high affinity binding pair.

18. Method as claimed in claim 17, **wherein** a universal modified solid phase reactant selected from streptavidin, avidin, hapten-specific antibodies, lectins and polymeric conjugates thereof is used.

19. Method as claimed in claim 17, **wherein** a universal modified solid phase reactant selected from conjugates of inert polypeptides or polysaccharides coupled to biotin, biotin derivatives, haptens or sugars is used.

20. Method as claimed in claim 16, **wherein** an analyte-specific modified solid phase reactant is used which is a conjugate with a partner of a high affinity binding pair.

21. Method as claimed in claim 20,
wherein
an analyte-specific modified solid phase reactant selected from analyte-specific antibodies, antigens, nucleic acids, nucleic acid analogues and lectins is used.

22. Conjugates of the general structural formula (II):

$$F[-(AO_n)T]_m \qquad (II)$$

in which
F is a biomolecule which is a partner of a high affinity binding pair selected from lectins, streptavidin, avidin and anti-hapten antibodies,
r is a number from 1 to 10,
AO is a C_2-C_3-alkylene oxide group,
n is a number from 5 to 500,
T is an end group preferably selected from OH, C_1-C_4 alkoxy and C_1-C_4 acyl and
m is a number from 1 to 10.

23. Conjugates of the general structural formula (III):

$$P'_{r'}F_r[-(AO)_n-T]_m \qquad (III)$$

in which
P' is a partner of a high affinity binding pair,
r' is a number from 1 to 10,
F is a biomolecule,
r is a number from 1 to 10 and
AO, n, T and m are defined as in claim 22.

24. Solid phase with a coating which contains a conjugate as claimed in claim 22 ~~or 23~~.

25. Use of a conjugate as claimed in claim 22 ~~or 23~~ for the reduction of unspecific binding to a solid phase in a method for the determination of an analyte.

26. Use of a conjugate as claimed in claim 25 in a method selected from immunological methods of determination and nucleic acid hybridization methods.

27. Reagent kit for the detection of an analyte which contains a conjugate as claimed in claim 22 or 23 or a solid phase as claimed in claim 24 in addition to other test components.

28. Method for the detection of an analyte comprising the steps:
    (a) preparing a solid phase on which an analyte-specific receptor is immobilized,
    (b) incubating the sample with the solid phase and a test reagent in which the test reagent contains an analyte-specific modified soluble reactant which is coupled to a poly(C_2-C_3)-alkylene oxide and
    (c) detecting the presence or/and the amount of the analyte in the sample.

29. Method as claimed in claim 28.
    wherein
    a modified soluble reactant is used which carries a labelling group or can react with a labelling group.

30. Method as claimed in claim 29,
wherein
a modified reactant selected from antibodies, antigens, nucleic acids, nucleic acid analogues and lectins is used.

31. Conjugates of the general formula (IV):

$$M_s\text{-}F''\text{-}[\text{-}(AO)_nT]_m \qquad (IV)$$

in which
M is a labelling group or a group that can react with a labelling group,
s is a number from 1 to 10,
F" is a soluble biomolecule which can specifically react with an analyte to be determined and
AO, n, T and m are defined as in claim 22.

32. Use of a conjugate as claimed in claim 31 for the reduction of unspecific binding to a solid phase in a method for the determination of an analyte.

33. Use of a conjugate as claimed in claim 32 in a method selected from immunological determination methods and nucleic acid hybridization methods.

34. Reagent kit for the detection of an analyte which contains a conjugate as claimed in claim 32 in addition to other test components.

35. Method for the reduction of unspecific binding to a solid phase when detecting an analyte in a sample, **wherein**
at least one reagent is used which contains a substance that is coupled to a poly(C_2-C_3)-alkylene oxide.

36. Method as claimed in claim 35,
wherein
the substance is selected from
(i) blocking substances,
(ii) analyte-unspecific solid phase reactants,
(iii) analyte-specific solid phase reactants and
(iv) soluble reactants.

37. Reagent kit for the detection of an analyte comprising at least one reagent which contains a substance that is coupled to a poly(C_2-C_3)-alkylene oxide.

38. Reagent kit as claimed in claim 37,
wherein
the substance is selected from
(i) blocking substances,
(ii) analyte-unspecific solid phase reactants
(iii) analyte-specific solid phase reactants and
(iv) soluble reactants.